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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/841,194	04/24/2001	Harold J. Vinegar	5659-06100/EBM	4736

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EXAMINER	
SUCHFIELD, GEORGE A	
ART UNIT	**PAPER NUMBER**
3672	9

DATE MAILED: 05/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/841,194	Applicant(s) VINEGAR ET AL.
	Examiner George Suchfield	Art Unit 3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 October 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2309-2385* is/are pending in the application.

4a) Of the above claim(s) *2312-2314 and 2351-2353* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2309-2311,2315-2350 and 2354-2385* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *2309-2385* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6,7 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. This application contains claims directed to the following patentably distinct species of the claimed invention:

A. Heating a coal formation using an electrical heater(s). Claims 2312 and 2351 exemplify this species.

B. Heating a coal formation using a surface burner(s). Claims 2313 and 2352 exemplify this species.

C. Heating a coal formation using a flameless distributed combustor(s). Claims 2314 and 2353 exemplify this species.

D. Heating a coal formation using a natural distributed combustor(s). Claims 2315 and 2354 exemplify this species.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 2309-2311, 2316-2350, 2355-2385 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations

of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

2. During a telephone conversation with Eric B. Meyertons on April 24, 2002 a provisional election was made without traverse to prosecute the invention of Species D, claims 2315 and 2354. Affirmation of this election must be made by applicant in replying to this Office action. Claims 2312-2314 and 2351-2353 stand withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected species.

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 2309-2311, 2315-2350 and 2354-2385 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2309 is deemed indefinite in that no clear relationship appears in the claim between the "selected section" of line 3 and the recitation "at least some of the coal formation". Is the "as least some ... formation" further define the "selected section" or is it in addition thereto? Also, the claim appears to claim a double range of, specifically, 15% followed by merely "at least some". Clarification and/or amendment is required.

Claim 2348 is deemed indefinite with respect to the recitation "controlling the heat to yield greater than about 60% by weight of condensable hydrocarbons". It is not clear whether the 60% refers to the portion of the formation or content of the produced fluids.

Other pending claims are deemed indefinite insofar as they depend from either 2309 or 2348.

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 2309-2385 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 2309-2385 of copending Application No. 09/841,293. Although the conflicting claims are not identical, they are not patentably distinct from each other because the coal formation treated by the methods of claims 2309 and 2348 of this pending application are deemed broad enough to encompass or comprise the hydrocarbon formation of claims 2309 and 2348 of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 2309,2311, 2315, 2317-2336,2342-2345,2348,2350, 2354,2356-2375,2381 and 2382 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Terry (3,924,680).

Figures 1,2 col. 2, line 35-60 and col. 3, lines 28-60 are particularly relied upon wherein heating of coal stratum (10) will result in 20-30% of the coal being evolved or pyrolyzed into volatile hydrocarbons/chemicals. The exemplary hydrocarbons/chemicals listed in col. 2, as well as the methane referred to in col.3, are deemed to comprise condensable hydrocarbons, as called for in claims 2309 and 2348. It is deemed that the precise amount of total organic content yielding condensable hydrocarbons of "at least about 15% by weight", as noted in claim 2309, is deemed to inherently or obviously occur during the volatilizing and pyrolyzing phases of the Terry process. Similarly, the precise conversion range of "greater than about 60% by weight of condensable hydrocarbons, as measured by the Fischer Assay", as called for in claims 2344 and 2348 , is deemed to inherently or obviously occur in carrying out the process of Terry.

As per claims 2311 and 2350, Terry clearly established and maintains a temperature in the pyrolysis range.

As per claim 2315, 2354, the lower coal stratum (18) in which the in situ combustion occurs in the process of Terry, Figure 2 in order to effect the volatilization/pyrolysis in coal stratum (10), is deemed to comprise a "natural distributed combustor", as broadly recited.

As per claims 2317,2318,2320,2356,2357,2359 Terry inherently or obviously effects a heating rate as recited in these claims based on, e.g., the composition of the coal stratums actually encountered as well as the thickness and characteristics of the intervening shale stratum through which the heat is conducted.

As per claim 2319, 2358, Terry clearly heats the cola stratum (10) by conduction.

Regarding claims 2321-2334, 2360-2373, it is deemed that the myriad hydrocarbon product mixtures recited in these claims would necessarily or obviously occur in carrying out the in situ retorting process of Terry, i.e., the precise composition of the product fluids is seen as dictated by the particular kerogen naturally occurring in the particular oil shale formation actually encountered in the field. Moreover, it would be an obvious matter of choice to operate the Terry process to minimize what would be considered refinery contaminants, such as sulfur, nitrogen and/or oxygen in the product mixtures. Similarly, it would be obvious to reduce or minimize the amount of asphaltenes in the product mixtures for optimum downstream refining. Also, in the event that the particular oil shale deposit encountered yields ammonia gas, it would be an obvious expedient to utilize in a commercial process such as fertilizer production.

As per claims 2335 and 2374, Terry (col. 6, line 19- col. 7, line 12) discloses raising and/or lowering the pressure in the coal stratum to facilitate fluids recovery. Since 2 bar, per se, comprises a relatively low pressure, such step(s) in Terry necessarily or obviously encompasses a pressure equal or greater than 2 bar.

As per claim 2336 and 2375, it is deemed that the non-condensable gases referred to in Terry would inherently or obviously include hydrogen; the precise amount would be dictated by the composition of the coal stratum (10) actually encountered.

As per claims 2342,2343, 2381,2382, Terry further includes an embodiment of carrying out hydrofracturing or electrolinking steps in coal stratum (10) to increase the permeability; such fracturing would inherently or obviously encompass the range of greater than 100 millidarcy insofar as the hydrofracturing/ electrolinking may be carried out numerous times.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

12. It is noted that claims 2310,2316,2337-2341,2346,2347,2349,2355,2376-2380,2383-2385 are rejected only under 35 USC 112(2) and obviousness double patenting.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Suchfield whose telephone number is (703) 308-2152, and is normally in the Office Monday through Friday, from 6:30 AM until 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell, can be reached on (703) 308-2151. The fax phone number for this Group is (703) 305-3597, (703) 305-7687 or (703) 306-4195.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-2168.

gs/Suchfield
May 1, 2002

George Suchfield
Primary Examiner
Art Unit 3672